

REMARKS

This paper is in response to the official action of August 8, 2005. Reconsideration is requested.

By the foregoing, claims 1-5 have been canceled, and claim 6 has been amended to more clearly describe the invention. No new matter has been added.

Further, the abstract has been amended.

The objection to claim 1 has been mooted by cancellation thereof, and it is submitted that the objection to claim 6 has been overcome by amendment.

Further, the indefiniteness rejection of claims 1-5 has been mooted by cancellation thereof, and it is submitted that the indefiniteness rejection of claims 6-9 has been overcome by amendment.

Claims 1-4 and 6-8 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kunikiyo (U.S. Patent No. 6,495,424) in view of Wolf et al., *Silicon processing for the VLSI Era*, Vol. 1, Lattice Press (1986), in further view of Rhodes et al. (U.S. Patent Appl. Pub. No. 2004/0178430). Claims 5 and 9 have been rejected as obvious over the same combination of references taken further in view of Song et al. U.S. 6,635,532. Reconsideration is requested.

The rejections of claims 1-5 have been mooted by cancellation thereof.

Referring to amended claim 6, the present application discloses a nitride film formed on the entire surface of the trench and the side wall oxide film formed on the surface of the nitride film and the sidewall of the polysilicon film. It is disclosed that the nitride film 111 plays a role of preventing implanted ions for adjusting a threshold voltage from flowing into the side wall oxidation film, at page 9, lines 13-14 of the specification.

The examiner points out that Kunikiyo discloses performing the annealing process for nitrifying the surface of the trench so as to form the nitride film (column 15, lines 30-36) and forming a side wall oxide film on the side wall of the trench (column 16, lines 16-23).

The invention differs from Kunikiyo for at least the following reasons.

Firstly, the nitride film of the invention is formed on the entire surface of the trench.

However, the nitride film (6) of Kunikiyo is formed only on an upper corner of the trench.

Secondly, the side wall oxide film of the invention is formed on the nitride film, (but not on the surface of the trench, as the nitride film covers the entire surface of the trench).

However, the side wall oxide film of Kunikiyo is formed on the surface of the trench.

Thirdly, in the invention, the oxidation process to form the side wall oxide film makes the implanted ions for adjusting a threshold voltage diffuse into the side wall oxide film (see page 2, lines 1 and 2). Therefore, the nitride film is formed on the entire surface of the trench before forming the side wall oxide film. However, the side wall oxide film of Kunikiyo is formed without the nitride film formed on the entire surface of the trench.

The secondary references do not teach or suggest that the nitride film is formed on the entire surface of the trench before forming the side wall oxide film.

Accordingly, the applicant believes that claims 6-9 are patentable over the cited references.

Should the examiner wish to discuss the foregoing or any matter of form in an effort to advance this application toward allowance, he is urged to telephone the undersigned at the indicated number.

Respectfully submitted,

MARSHALL, GERSTEIN & BORUN LLP

November 4, 2005

By: 

James P. Zeller

Reg. No. 28,491

Attorneys for Applicants

6300 Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6357
(312) 474-6300